

Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-35 (canceled).

36. (new) A vacuum feeder system comprising:

a vacuum interface for connecting to a vacuum source;

a transfer device for transferring flaccid materials or pieces from a first transport means to a second transport means or to a weighing system, wherein the materials or pieces are delivered to said transfer device via the first transport means, said transfer device including a cylinder body that can be rotated, wherein said cylinder body is provided with a plurality of holes through an outer surface of said cylinder body; and

a plurality of vacuum connection means provided inside said cylinder body for connecting said vacuum interface to said holes, wherein

said transfer device transfers the materials or pieces from the first transport means to the second transport means or to said weighing system by rotating said cylinder body while the materials or pieces are held in place by a vacuum provided at holes in communication with the materials or pieces.

37. (new) The system according to claim 36, wherein said materials are delivered to said transfer device in an unorderedly form.

38. (new) The system according to claim 36, wherein said materials are delivered to said transfer device in an accumulated form.

39. (new) The system according to claim 36, wherein said vacuum interface includes a flange coupled to said vacuum connection means.

40. (new) The system according to claim 39, wherein said flange includes a vacuum distribution chamber.

41. (new) The system according to claim 36, wherein each one of said vacuum connection means includes means that are placed inside said cylinder.

42. (new) The system according to claim 36, further comprising a plurality of tubes provided within said cylindrical body, wherein each one of said vacuum connection means includes one of said tubes for connecting to at least one of said holes.

43. (new) The system according to claim 42, wherein each one of said tubes are connected to the cylinder body and each one of said tubes connect one of the holes on the outer surface to a corresponding one of a plurality of additional holes arranged in a circle on an end of the cylinder body.

44. (new) The system according to claim 43, wherein said vacuum interface includes a flange that faces the end of the cylinder having the additional holes and has a passage arranged in an arc having a radius substantially equal to the radius of the circle on which the additional holes are arranged.

45. (new) The system according to claim 44, wherein the length of the arc determines the angular distance for which the materials or pieces are held in place by the vacuum at the holes on the cylinder body.

46. (new) The system according to claim 36, wherein each one of said vacuum connection means is connected to the cylinder body, and wherein each one of said vacuum connection means connects one of the holes on the cylindrical body outer surface to a corresponding one of a plurality of additional holes arranged on an end of the cylinder body.

47. (new) The system according to claim 46, wherein said vacuum interface includes a flange that faces the end of the cylinder having the additional holes and has a

passage arranged in a pattern corresponding to the additional holes.

48. (new) The system according to claim 36, wherein each of said holes on the cylindrical surface has a socket attached thereto and provided on the surface of said cylinder body for contacting and holding the materials or pieces.

49. (new) The system according to claim 48, wherein said sockets include one or more of: an oval nozzle resulting from an inclined cut at an end of the cylinder body forming the socket, a circular nozzle formed by a normal cross-section of the cylinder body forming the socket, a hollow truncated cone nozzle formed by bevelling the normal cross-section of a straight end of the cylinder body forming the socket, a circular nozzle formed by a ring type cylindrical boss on a top of the cylinder body forming the socket and/or a rectangular nozzle on a top end of the cylinder body forming the socket.

50. (new) The system according to claim 36, wherein the items or pieces that are supplied via the first transport means to a transfer location and are accumulated at the transfer location until held by the transfer device.

51. (new) The system according to claim 36, wherein said cylinder body is placed at the transfer location with an axis placed essentially horizontally.

52. (new) The system according to claim 36, wherein said pieces may differ in size, shape, thickness, and/or weight from each other.

53. (new) The system according to claim 36, wherein pieces that are not caught by the rotating cylinder body can continue to a discharge point in order to be placed back on the first transport means.

54. (new) The system according to claim 36, wherein said pieces that are delivered by said transfer device are being graded.

55. (new) A vacuum feeder system comprising:

a transfer device for transferring materials or pieces from a first transport means to a second transport means or to a weighing system, wherein the materials or pieces are delivered to said transfer device via the first transport means, said transfer device including:

a rotating cylinder body having a plurality of first holes on a surface of the cylindrical body, said cylinder body also have a plurality of second holes on an end of said cylinder body, and

a plurality of connections, wherein each one of said first holes is connected to a corresponding one of said second holes via one of said plurality of connections;

a vacuum interface connected to a vacuum source and connected to said transfer device, wherein said second holes on said transfer device are connected to said vacuum source through a vacuum path, and wherein

said transfer device transfers the materials or pieces from the first transport means to the second transport means or to the weighing system by rotating the cylinder body and by utilizing vacuum at said first holes for holding said materials or pieces, and wherein

the materials or pieces are released from said holding by removing the vacuum at said first holes to transfer the materials or pieces to the second transport means or to the weighing system.

56. (new) The system according to claim 55, further comprising a plurality of sockets, wherein each of said first holes has one of said sockets attached thereto and provided on the surface of said cylinder body for contacting and holding the materials or pieces.

57. (new) The system according to claim 56, wherein said sockets include one or more of: an oval nozzle resulting from an inclined cut at an end of the cylinder body forming the socket, a circular nozzle formed by a normal cross-section of the cylinder body

forming the socket, a hollow truncated cone nozzle formed by beveling the normal cross-section of a straight end of the cylinder body forming the socket, a circular nozzle formed by a ring type cylindrical boss on a top of the cylinder body forming the socket, and/or a rectangular nozzle on a top end of the cylinder body forming the socket.

58. (new) The system according to claim 55, wherein the items or pieces are delivered to said transfer device in an unorderedly form.

59. (new) The system according to claim 55, wherein the items or pieces are delivered to said transfer device in an accumulated form.

60. (new) The system according to claim 55, wherein said cylinder body is placed at the transfer location with an axis placed essentially horizontally.

61. (new) The system according to claim 55, wherein the items or pieces that are supplied via the first transport means to a transfer location and are accumulated at the transfer location until held by the transfer device.

62. (new) The system according to claim 55, wherein the items or pieces may differ in size, shape, or weight from each other.

63. (new) The system according to claim 55, wherein items or pieces that are not held by the transfer device continue to a discharge point in order to be placed back on the first transport means.

64. (new) The system according to claim 55, wherein the items or pieces that are delivered by said transfer device are graded.

65. (new) The system according to claim 55, wherein said plurality of connections are tubes that are provided within said cylinder body.

66. (new) The system according to claim 55, wherein said second holes are

arranged in a circle, and wherein said vacuum path is formed in an arc having a radius substantially equal to the radius of the circle on which the second holes are arranged.

67. (new) The system according to claim 66, wherein the length of said arc determines the angular distance for which the materials or pieces are held by the vacuum at the holes on the cylinder body.

68. (new) A vacuum feeder system comprising:

a transfer device for transferring materials or pieces from a first transport means to a second transport means or to a weighing system, wherein the materials or pieces are delivered to said transfer device via the first transport means, said transfer device including:

a rotating cylinder body having a plurality of first holes on a surface of the cylindrical body, said cylinder body also have a plurality of second holes connected to a vacuum interface, and

a plurality of connections, wherein each one of said first holes is connected to a corresponding one of said second holes via one of said plurality of connections;

wherein said vacuum interface is connected to a vacuum source, and wherein

said transfer device transfers the materials or pieces from the first transport means to the second transport means or to the weighing system by rotating the cylinder body and by utilizing vacuum at said first holes for holding said materials or pieces, and wherein

the materials or pieces are released from said holding by removing the vacuum at said first holes to transfer the materials or pieces to the second transport means or to the weighing system.

69. (new) The system according to claim 68, further comprising a plurality of sockets, wherein each of said first holes has one of said sockets attached thereto and provided on the surface of said cylinder body for contacting and holding the materials or

pieces.

70. (new) The system according to claim 69, wherein said sockets include one or more of: an oval nozzle resulting from an inclined cut at an end of the cylinder body forming the socket, a circular nozzle formed by a normal cross-section of the cylinder body forming the socket, a hollow truncated cone nozzle formed by bevelling the normal cross-section of a straight end of the cylinder body forming the socket, a circular nozzle formed by a ring type cylindrical boss on a top of the cylinder body forming the socket, and/or a rectangular nozzle on a top end of the cylinder body forming the socket.

71. (new) The system according to claim 68, wherein the items or pieces are delivered to said transfer device in an unorderedly form.

72. (new) The system according to claim 68, wherein the items or pieces are delivered to said transfer device in an accumulated form.

73. (new) The system according to claim 68, wherein said cylinder body is placed at the transfer location with an axis placed essentially horizontally.

74. (new) The system according to claim 68, wherein the items or pieces that are supplied via the first transport means to a transfer location and are accumulated at the transfer location until held by the transfer device.

75. (new) The system according to claim 68, wherein the items or pieces may differ in size, shape, or weight from each other.

76. (new) The system according to claim 68, wherein items or pieces that are not held by the transfer device continue to a discharge point in order to be placed back on the first transport means.

77. (new) The system according to claim 68, wherein the items or pieces that are delivered by said transfer device are graded.

78. (new) The system according to claim 68, wherein said plurality of connections are tubes that are provided within said cylinder body.

79. (new) The system according to claim 68, wherein said second holes are arranged in a circle, and wherein a vacuum path is formed in an arc having a radius substantially equal to the radius of the circle on which the second holes are arranged.

80. (new) The system according to claim 79, wherein the length of said arc determines the angular distance for which the materials or pieces are held by the vacuum at the holes on the cylinder body.